

## **DETAILED ACTION**

### ***Remarks***

This Office action is responsive to applicant's amendment filed on December 19, 2007.

Claims 1-9 and 11-25, of which claims 24 and 25 are newly submitted.

### ***Claim Objections***

Claim 24 is objected to because of the following informalities:

1. In claim 24 at line 4, it is suggested to change "widens" to --widen--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 11-14 presently depend from claim 10, which has been canceled. Thus, the scope of claims 11-14 are indefinite.

It is suggested to amend the claims as follows:

1. In claim 11 at line 1, it is suggested to change "claim 10" to --claim 1--.
2. In claim 12 at line 1, it is suggested to change "claim 10" to --claim 1--.
3. In claim 13 at line 1, it is suggested to change "claim 10" to --claim 1--.

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4. In claim 14 at line 1, it is suggested to change "claim 10" to --claim 1--.

Claims 11-14 recites the limitation "the pulsation" in line 2 (for claims 11, 12 and 14) and lines 5-6 (for claim 13). There is insufficient antecedent basis for this limitation in the claim.

It is suggested to amend each claim by changing "the pulsation" to --pulsation--.

### ***Claim Rejections - 35 USC § 102***

The rejection of claims 1-14 under 35 U.S.C. 102(e) based on Skala et al. (U.S. Pat. 6,911,277 B2) has been withdrawn.

(new rejection)

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 11-14, 24 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Gorman et al. (U.S. Pat. 6,124,054).

For claims 1-4, 24 and 25, Gorman et al. teaches a fuel cell system having a switching member [52] controlled/actuated by an actuation module [65] to open and close periodically. See col. 3 line 26 et seq. Pulsation, i.e. "intermittent flow" of the exhaust gas results. See, e.g. claim 11.

To the extent that claims 11-14 are understood for the reasons set forth under 35 U.S.C. 112, second paragraph (discussion above), the claimed storing of the output behavior "under

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conditions of flocculation of water droplets...” has not been given patentable weight, as this limitation appears to be drawn to a statement of intended use. Additionally, the instant “to narrow an opening area...” and “generating pulsation in the gas conduit” conditional to an output or measurement in the fuel cell have not been given patentable weight, as these process-of-using steps fail to further limit or give patentable structural scope to the “fuel cell system...” claim.

### ***Claim Rejections - 35 USC § 103***

The rejection of claims 15-19, 22 and 23 under 35 U.S.C. 103(a) based on Skala et al. (U.S. Pat. 6,911,277 B2) in view of Kawazu (JP 07-235324) or “Just the Basics: Fuel Cells” has been withdrawn.

(new rejection)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorman et al. (U.S. Pat. 6,124,054) in view of Lambrech (U.S. Pat. 4,393,123).

The teachings of Gorman et al. are discussed above.

For claims 5-9, Gorman et al. does not explicitly teach a slit for the switching member or that the switching member is a tubular member. However, Lambrech teaches a tubular switching member [31] having a slit [32]. The skilled artisan would find obvious to employ a tubular shape

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for the switching member of Gorman et al., for reasons such as allowing for selective coupling of the fluid gases and enhanced temperature control. See Lambrech in col. 2 line 16 et seq. The examiner notes that the instant “positioning...” steps have not been given patentable weight, as these process-of-using steps fail to further limit or give patentable structural scope to the “fuel cell system...” claim.

Claims 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorman et al. (U.S. Pat. 6,124,054) in view of Kawazu (JP 07-235324).

The teachings of Gorman et al. are discussed above.

For claims 15-19, Gorman et al. does not explicitly teach a water level determination module to determine the level of water in the fuel cell blocks. However, Kawazu teaches detecting the wet condition of electrodes, such as its electric resistance, and purging the fuel cell stack with oxygen gas and thereby exhausting water outside. See par. [0018] and [0039] of the machine translation. The skilled artisan would find obvious to modify Gorman et al. by employing a water level determination module. The motivation for such a modification would be to enhance water removal at the surface of the cathode.

Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorman et al. (U.S. Pat. 6,124,054) in view of “Just the Basics: Fuel Cells”.

The teachings of Gorman et al. are discussed above.

Gorman et al. does not explicitly teach its fuel cell in a vehicle. However, the article is relied upon to teach or at least suggest to the skilled artisan a vehicle using the claimed fuel cell system, motivated by reasons such as its energy efficiency and low/zero emissions, *inter alia*.

### ***Response to Arguments***

Applicant's arguments filed with the present amendment, insofar as Skala et al. not generating pulsation in the manner as required by the present claims, have been fully considered but are moot in view of the new ground(s) of rejection.

### ***Allowable Subject Matter***

Claims 20 and 21 are maintained objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

/J. M./

Examiner, Art Unit 1795

/PATRICK RYAN/

Supervisory Patent Examiner, Art Unit 1795